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Instinct can act on the "all-or-none" principle only by virtue of suppression of every other pattern of behavior. Now instinct is in its turn suppressed by the herd acting through suggestion. Thus we see instinct becomes graded. The chapters on the psychoneuroses are excellent as far as they go. The biological analogies used make neuroses and psychoses more intelligible and coherent. They will stimulate further research by this method of approach.

The chapter on Sublimation is disappointing; it is barely more than two pages in length. Dr. Rivers must have seen a great deal of sublimation in his war work and I hope he will subject the data he has to a critical attitude as candid, general and searching as he has the process and end products of regression.

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Scientific Method: its Philosophy and Practice. F. W. WESTAWAY. Second edition. London: Blackie and Son. 1919.

This text is intended apparently to aid would-be teachers in England, particularly teachers of elementary science, by giving them a grasp of the elements of logic and scientific method. Any text on logic arouses again that long deferred hope, in those who are called upon to teach the first rudiments of logic, that here at last may be a way of approach which is both worthy of the subject and inspiring to the beginning student. The book before us does not satisfy that hope, which is, alas! Utopian, but in some respects it does go half way. It is a peculiar book. Written by a pragmatist, it is scornful of deductive logic; but displays, on the other hand, a most astonishing trust in the "authorities" of inductive logic, quoting them with a scrupulous respect which some of those quoted hardly deserve. One may say indeed, that the book is an orthodox and well-referenced elementary textbook on inductive logic, plus several peculiar preludes and supplements all its own. Thus, after a couple of preliminary chapters, good but brief, there is a chapter on philosophy's task and problem, distinctly the weakest spot in the book—in spite of having been rewritten for this edition—a chapter from which the average student would doubtless draw a considerable fund of confused misinformation. Then there follows something much better, a rapid history of philosophy from the Sophists to Hume, emphasis being on the logical contributions of the philosophers, a hundred pages pretty well done. This section might make the book useful to such students as would otherwise never learn anything of Plato or Descartes. Then follows the inductive logic, which covers the usual things well, and goes far enough to mention some points not ordinarily found in such detail, such, for instance, as the devising of empirical formulæ, and the reduction of observations. After the logic comes the most valuable section of all, "Famous Men of Science and their Methods," sixty pages, all too short, of quotations from scientists illustrating cases of actual inquiry, each case sufficiently at length to enter into the spirit of the thing. Admirable further references follow. Then comes a group of pedagogical suggestions concerning ways of teaching science, and the book closes with some final remarks commenting on the relation between science and the late war. Some teachers of elementary logic may find that this rather out of the ordinary sequence of subjects makes for them a useful introduction to philosophy through logic. In any case the book is worth looking over.

It may be that the perfect textbook on logic, like "the great American novel" so long awaited by critics, is a thing impossible, because what would satisfy some of the requirements would necessarily do violence to others. In the first place, it is doubtful whether there is any such subject as logic. There are a number of subjects called by that name, but they are about as different as chemistry and elocution. Logic lies on the vague boundary line where diverse empires meet and where there is great confusion of tongues. Our author, indeed, saves himself by calling his volume *Scientific Method.* But even so, full definiteness is not secured. There are great ranges of inquiry, at least approaching the scientific, inquiries in social sciences, in historical sciences, in applied sciences, in the arts, statesmanship, war, business, on which this book could scarcely touch, even had the author wished. And within the physical sciences themselves there is much that our author ignores, for this text is, as we have said above, orthodox. This is no condemnation of the book. It is simply a comment on logic texts in general, that they are, all of them, a random sample dipped up out of a larger world of facts. In the sample are strange beasts, large and small, and quite a bit of amorphous mud off the ocean bottom, the whole contents of the dipper being fairly well dried out before being shown to the student. So here is the first difficulty with logic texts, to locate their proper subject-matter. Any choice among brands of logic, including the one made below in the present article, is arbitrary and in a sense unfair.

In the second place, logic undoubtedly enjoys such favor as it has had in college curricula, because of the popular supposition, or shall we say superstition, that it is a practical subject. This might at first promise to be an aid in the choice of topics. Actually it complicates matters. It is possible that everyone might agree on a preliminary pointing out of some of the crudely obvious fallacies, mostly matters of language or of intruding prejudice and emotion. But after that, what? If we are sincere in wanting to furnish something practical, we must never impose upon the student of logic any form of rules of the game which he would thereafter think of as being somehow peculiar to logic books, or which he could not subsequently apply, as it were instinctively, in his own daily thinking. This is a hard requirement. It condemns the syllogism as ordinarily taught. But also it opposes the strongest momentary desire of the student himself. He asks of his teacher in logic: "Give me a rule, that I may apply it automatically. I must pass the course, and don't you see how helpless I am when asked to think out the why of these things for myself?" But even if these difficulties be resolutely met, it is by no means evident that a programme of isolated problems can be other than both irksome and futile. It laboriously corrects now this fault, now that, but the power to apply in new cases is seldom thereby created. To accomplish that, we must create a spirit and an attitude, and above all, an enthusiasm, the feeling that there is something important at stake. The average student thinks crudely, but he is not worried by this, for he does not take his own thinking seriously. Here indeed is the key to the matter. The most practical instruction in logic is one that shall first establish in the student a respect for thought, a sense of its seriousness, an appreciation of its importance. And that in turn can only be accomplished by showing him thought at its highest power, playing the noblest part it is capable of in the great world of civilized life, showing it grappling with momentous questions, showing it solving problems important to all mankind. Teach thought in its great successes, and not in its correction of trivial and comic fallacies. Let the details of daily humdrum applications be added later, and in their proper proportions. Doubtless it is well that students should be taught to interpret sentences, to perceive what a question means or what it would be to deny a given statement. It is well that the student should gain skill in debate. We might even hope that somewhere he should obtain, what Mr. Westaway and some other eminent pragmatists have never achieved, some appreciation of what is meant by "logical form" and by deductive rigor. But all these, even if they belong not, as the case may be, to courses on rhetoric or on mathematics, must wait on the primary task of making a student feel, what he so seldom is made to feel, that thinking and right thinking really matter in the world of great affairs.

The ideal logic text must, then, introduce the student to thought at its highest tension and in its natural environment. Only great examples adequately and livingly presented will suffice. The ideal text would have philosophic breadth; the text before us has only miscellaneousness. The ideal text would have a center, a unity: for instance, it might treat of evidence in all the protean forms that evidence takes, what evidence means in a court of law, in a scientific laboratory, in an historical synthesis and reconstruction of a vanished civilization, in planning the route of a profitable railroad, in solving the secret of a crime, or facing the world problems of philosophy and religion. But the principle involved is ever the same: arousing an appreciation of, and admiration for thought, by showing it engaged in great and difficult works. We have no such text, nor an approach to such. For occasional lectures, the teacher of logic may even now draw inspiration from Merz's masterly volumes on nineteenth century science, or from such biographical works as Duclaux's *Pasteur: the History of a Mind,* or again, in a different quarter, from Cardinal Newman's *Grammar of Assent.* He may dip into Mach or Poincaré, or into the writers on historical methods. He may collect apt illustrations from many sources: from Wigmore's *Principles of Judicial Proof,* or from Gregory's *Discovery,* or indeed, from the text now before us. But all this is makeshift. We ought to have a text to put into the student's own hands, saying: "Read this and know that he who does not understand what thinking really means does not understand what civilization is. As correctness of speech is a prerequisite of eloquent speech, but mastery of language is more than correctness, so likewise, is it necessary that we think correctly—that is the indispensable though difficult minimum —but thinking at its best is more than correct, it is efficient and judicious and wise. It is the supreme prerogative of civilized man." Scarcely anything that has been done in the last fifty or sixty years has been incorporated in the existent texts of logic. Their authors seem to know neither the advances of symbolic logic, nor of instrumental logic, nor of science in general. But if we had instead such an ideal text as suggested, we should no longer have to apologize to our students and to ourselves for our courses in logic.

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SCIENTIA, April, 1921. *Les contributions des différents peuples au développment des mathématiques. II. Le caractére international de la pensée mathématique* (pp. 253–262): GINO LORIA (Genoa).–All suggested criteria of national style or method in